

## CLARK COUNTY, NEVADA

MEMO

FROM: Office of Planning and Development  
 TO: Mr. John T. Turner, Jr.  
 DATE: 7/1/67  
 SUBJECT: Sahara Town Square

MESSAGE

REPLY

## CLARK COUNTY, NEVADA

MEMO

FROM: Office of Planning and Development  
 TO: Mr. John T. Turner, Jr.  
 DATE: 7/1/67  
 SUBJECT: Sahara Town Square

MESSAGE

REPLY

## PURPOSE AND INTENT

The purpose of this Hydrology Study is to explore the existence of potential flood hazards which might affect this site. This study intends to show what measures, if any, the developer of the site should take in order to protect his property against any flood damage.

Data and procedures used in the analysis of this Study was obtained from field observation and utilizing available topographic maps.

All runoff calculations for this Hydrology Study are based on the methods as outlined in the publication "Urban Hydrology for Small Watersheds (TR-55)" as published by the U.S. Soil Conservation Commission.

## OFFSITE (Existing)

15.8 acres CN = 99

L = 1094 S = 0.5% V = 1.4 ft/s L<sub>c</sub> = 22 L<sub>u</sub> 2.775Q<sub>u</sub> = 26.9Q<sub>u</sub> = 33.9Q<sub>u</sub> = 45.0

## OFFSITE (Existing)

16.5 acres CN = 87

L = 1123 S = 0.8% V = 0.9 ft/s L<sub>c</sub> = 37 L<sub>u</sub> 5.70Q<sub>u</sub> = 14.0Q<sub>u</sub> = 18.7Q<sub>u</sub> = 26.3

## Onsite (Developed)

16.5 acres CN = 94

L = 1123 S = 0.8% V = 1.8 ft/s L<sub>c</sub> = 17 8.50Q<sub>u</sub> = 30.7Q<sub>u</sub> = 38.7Q<sub>u</sub> = 51.5

## ON-SITE DRAIN CAPACITY

16.5 acres CN = 94 S = 0.8%

S = 5.6 cfs

## LOCATION AND EXISTING TOPOGRAPHY

The subject site is described as a portion of the Northwest Quarter (NW 1/4) of the Northwest Quarter (NW 1/4) of Section 11, Township 21 South, Range 61 East, M.D.R.M., Clark County. It is further described as Clark County Assessor's Parcel No. 120-800-008, and is located at the Southeast corner of Sahara Avenue and Maryland Parkway.

The site is surrounded on all sides by fully developed lands: multifamily residential to the east, single family residential to the south and commercial to the west and north. The site slopes generally to the east at an approximate rate of 0.8%.

Upland area which could negatively impact the site lies to the west of Maryland Parkway. It consists of 15.8 acres of commercial development and has the potential to generate storm water runoffs of 32.3 c.f.s., under the conditions of a 25 year event.

The site itself contains 16.5 acres and could generate a runoff of 35 c.f.s. in its present condition, or 37.5 c.f.s. fully developed, for a 25 year event.

## HYDROLOGY STUDY

SAHARA TOWN SQUARE

SECTION 11, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.R.M.

CLARK COUNTY, NEVADA

June 16, 1967

PREPARED FOR:

KITTYRELL CARLOCK AND ASSOCIATES

PREPARED BY:

RADGHMAN & TURNER, INC.  
 2325 WEST CHARLSTON BOULEVARD  
 LAS VEGAS, NEVADA 89102  
 702/870-8771



## SUMMARY AND RECOMMENDATIONS

The runoff from Area "A" is diverted prior to reaching the subject site, even with a 100 year runoff (see Street Flow Calculations) by Maryland Parkway.

The site will be drained in two directions. Half will be surface drained toward Sahara Avenue and into its 60" RCP. The other half will be drained toward Karen Avenue, and flow east within the existing right-of-way. See Grading Plan for "on-site" drainage details.

## TABLE OF CONTENTS

|                                       |     |
|---------------------------------------|-----|
| PURPOSE AND INTENT.....               | 1   |
| LOCATION AND EXISTING TOPOGRAPHY..... | 2   |
| SUMMARY AND RECOMMENDATIONS.....      | 3   |
| VICINITY MAP.....                     | 4   |
| DRAINAGE AREA MAP.....                | 5   |
| RUNOFF CALCULATIONS.....              | 6-7 |
| STREET FLOW CALCULATIONS.....         | 8   |

## APPENDIX

|                                         |      |
|-----------------------------------------|------|
| Isopleths of 24 hour Precipitation..... | 9-11 |
| Runoff Curve Numbers.....               | 12   |
| Average Velocity Chart.....             | 13   |
| Peak Rates of Discharge Curves.....     | 14   |
| Slope Adjustment Factors.....           | 15   |
| Runoff Depth Chart.....                 | 16   |

## DRAINAGE ANALYSIS

SAHARA TOWN SQUARE

SECTION 11, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.R.M.

CLARK COUNTY, NEVADA

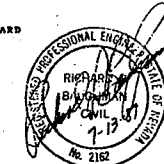
JULY 13, 1967

PREPARED FOR:

KITTYRELL CARLOCK AND ASSOCIATES

PREPARED BY:

RADGHMAN & TURNER, INC.  
 2325 WEST CHARLSTON BOULEVARD  
 LAS VEGAS, NEVADA 89102  
 702/870-8771



NOT LEGIBLE FOR MICROFILMING



| TIME | INFLOW              |               |                     |               | OUTFLOW<br>VOLUME<br>@ 1.50 CFS | DETAINED<br>VOLUME |
|------|---------------------|---------------|---------------------|---------------|---------------------------------|--------------------|
|      | K-1<br>FLOW<br>RATE | K-1<br>VOLUME | K-2<br>FLOW<br>RATE | K-2<br>VOLUME |                                 |                    |
| .49  | 1.1                 | 116.8         | 0.2                 | 28.8          | 145.6                           | 4677.8             |
| .51  | 0.8                 | 100.8         | 0.2                 | 21.6          | 122.4                           | 4037.0             |
| .53  | 0.6                 | 72.0          | 0.1                 | 7.2           | 79.2                            | 5558.8             |
| .61  | 0.4                 | 50.4          | 0                   | 0             | 50.4                            | 4637.4             |
| .65  | 0.1                 | 16.0          | 0                   | 0             | 16.0                            | 3887.2             |
| .68  | 0.2                 | 28.8          | 0                   | 0             | 28.8                            | 3122.4             |
| .72  | 0.2                 | 21.6          | 0                   | 0             | 21.6                            | 2350.8             |
| .76  | 0.1                 | 16.0          | 0                   | 0             | 16.0                            | 1573.8             |
| .86  | 0.1                 | 16.0          | 0                   | 0             | 16.0                            | 0                  |
| .95  | 0                   | 0             | 0                   | 0             | 0                               | 0                  |

TOTAL HOLDING TIME = 0.46 + 0.08 + 0.78 HRS

| SARAKA TOWNE SQUARE<br>DETENTION VOLUME COMPARISON<br>25 YEAR FREQUENCY |                     |               |                     |               |                                 |                    |
|-------------------------------------------------------------------------|---------------------|---------------|---------------------|---------------|---------------------------------|--------------------|
| TIME                                                                    | INFLOW              |               |                     |               | OUTFLOW<br>VOLUME<br>@ 1.50 CFS | DETAINED<br>VOLUME |
|                                                                         | K-1<br>FLOW<br>RATE | K-1<br>VOLUME | K-2<br>FLOW<br>RATE | K-2<br>VOLUME |                                 |                    |
| .02                                                                     | 0.4                 | 14.4          | 0.7                 | 25.2          | 19.6                            | 400.1              |
| .04                                                                     | 1.2                 | 47.6          | 2.4                 | 111.6         | 169.2                           | 400.1              |
| .06                                                                     | 2.4                 | 129.6         | 1.8                 | 223.2         | 152.8                           | 400.3              |
| .08                                                                     | 3.8                 | 271.2         | 1.7                 | 432.0         | 655.2                           | 400.1              |
| .10                                                                     | 5.8                 | 345.6         | 10.2                | 682.4         | 1008.0                          | 400.3              |
| .11                                                                     | 8.2                 | 508.0         | 11.5                | 781.2         | 1285.2                          | 400.3              |
| .12                                                                     | 10.2                | 662.4         | 12.1                | 856.8         | 1510.2                          | 400.3              |
| .15                                                                     | 17.5                | 781.2         | 12.1                | 856.8         | 1666.8                          | 400.3              |
| .17                                                                     | 17.5                | 856.8         | 11.5                | 856.8         | 1711.6                          | 400.3              |
| .19                                                                     | 12.4                | 889.2         | 10.2                | 781.2         | 1670.4                          | 400.3              |
| .21                                                                     | 12.1                | 815.6         | 8.6                 | 669.6         | 1483.2                          | 400.3              |
| .23                                                                     | 11.5                | 856.8         | 6.1                 | 529.2         | 1386.0                          | 400.3              |
| .25                                                                     | 10.2                | 799.2         | 4.8                 | 359.6         | 1108.8                          | 400.3              |
| .27                                                                     | 9.7                 | 714.4         | 4.1                 | 320.4         | 1056.8                          | 400.3              |
| .29                                                                     | 8.4                 | 650.8         | 3.2                 | 262.8         | 914.4                           | 400.3              |
| .30                                                                     | 6.9                 | 550.8         | 2.9                 | 219.6         | 770.4                           | 400.1              |
| .32                                                                     | 5.7                 | 453.6         | 2.1                 | 187.2         | 640.8                           | 400.3              |
| .34                                                                     | 4.8                 | 390.4         | 1.8                 | 147.6         | 525.6                           | 400.3              |
| .36                                                                     | 4.1                 | 320.4         | 1.1                 | 111.6         | 432.0                           | 400.3              |
| .38                                                                     | 3.5                 | 267.2         | 1.1                 | 127.8         | 395.0                           | 400.6              |
| .42                                                                     | 2.6                 | 216.8         | 0.7                 | 129.6         | 346.8                           | 400.6              |
| .46                                                                     | 1.8                 | 176.8         | 0.5                 | 86.4          | 263.2                           | 400.6              |
| .49                                                                     | 1.1                 | 116.8         | 0.4                 | 56.8          | 173.6                           | 400.6              |

| TIME | INFLOW              |               |                     |               | OUTFLOW<br>VOLUME<br>@ 1.50 CFS | DETAINED<br>VOLUME |
|------|---------------------|---------------|---------------------|---------------|---------------------------------|--------------------|
|      | K-1<br>FLOW<br>RATE | K-1<br>VOLUME | K-2<br>FLOW<br>RATE | K-2<br>VOLUME |                                 |                    |
| .49  | 1.1                 | 116.8         | 0.4                 | 43.2          | 208.8                           | 400.6              |
| .53  | 1.0                 | 122.4         | 0.2                 | 21.6          | 146.0                           | 400.6              |
| .57  | 0.7                 | 86.4          | 0.1                 | 14.4          | 100.8                           | 400.6              |
| .61  | 0.5                 | 64.8          | 0.1                 | 7.2           | 72.0                            | 400.6              |
| .65  | 0.4                 | 50.4          | 0                   | 0             | 50.4                            | 400.6              |
| .68  | 0.3                 | 36.0          | 0                   | 0             | 36.0                            | 400.6              |
| .72  | 0.2                 | 21.6          | 0                   | 0             | 21.6                            | 400.6              |
| .76  | 0.1                 | 16.0          | 0                   | 0             | 16.0                            | 400.6              |
| .86  | 0.1                 | 16.0          | 0                   | 0             | 16.0                            | 400.6              |
| .95  | 0                   | 0             | 0                   | 0             | 0                               | 400.6              |

3779.4 ÷ 5.56 = 679.7" = 1600 = 0.19 HRS

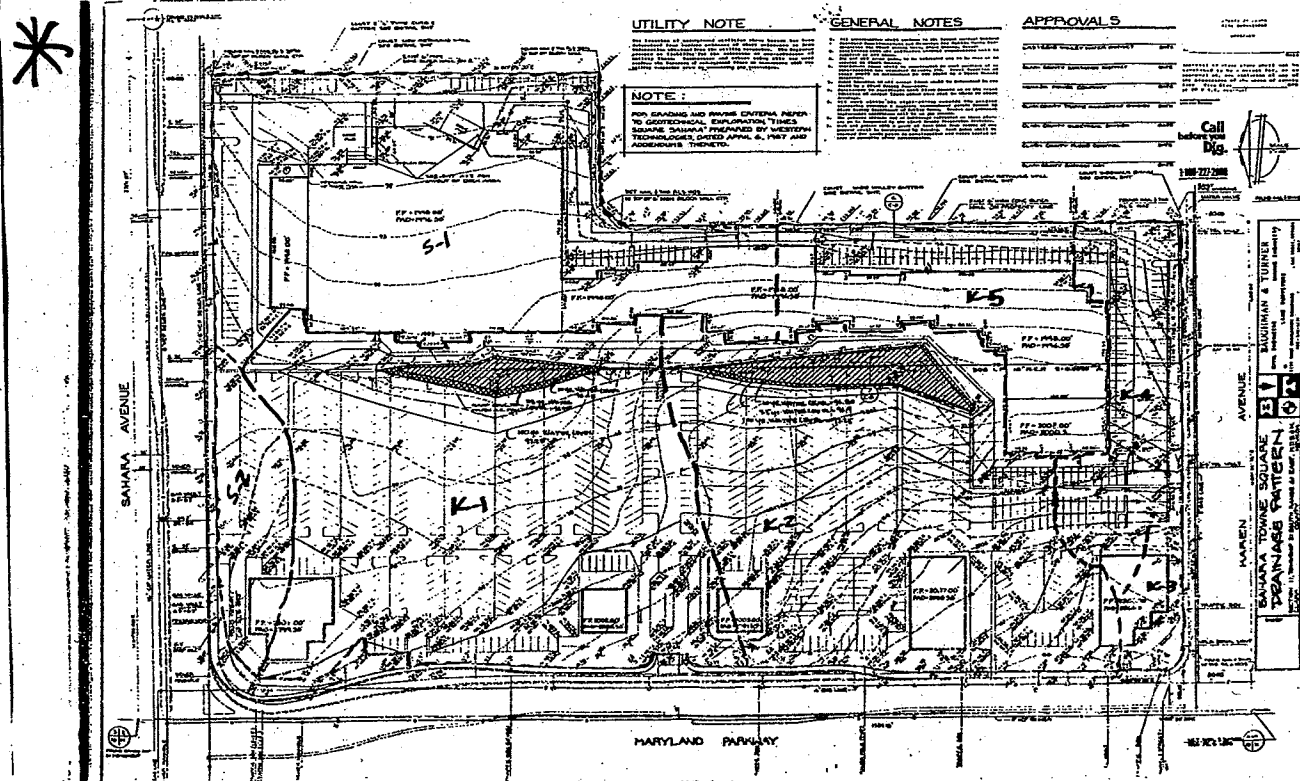
TOTAL HOLDING TIME = 0.45 + 0.08 + 0.19 = 1.06 HRS

| SARAKA TOWNE SQUARE<br>DETENTION VOLUME COMPARISON<br>100 YEAR FREQUENCY |                     |               |                     |               |                                 |                    |
|--------------------------------------------------------------------------|---------------------|---------------|---------------------|---------------|---------------------------------|--------------------|
| TIME                                                                     | INFLOW              |               |                     |               | OUTFLOW<br>VOLUME<br>@ 1.50 CFS | DETAINED<br>VOLUME |
|                                                                          | K-1<br>FLOW<br>RATE | K-1<br>VOLUME | K-2<br>FLOW<br>RATE | K-2<br>VOLUME |                                 |                    |
| 0                                                                        | 0                   | 0             | 0                   | 0             | 0                               | 400.3              |
| .02                                                                      | 0.5                 | 18.0          | 1.1                 | 39.6          | 57.6                            | 400.3              |
| .04                                                                      | 1.6                 | 75.6          | 3.0                 | 147.6         | 223.2                           | 400.3              |
| .06                                                                      | 3.0                 | 165.6         | 4.8                 | 286.4         | 450.0                           | 400.3              |
| .08                                                                      | 4.9                 | 286.4         | 10.4                | 550.8         | 835.2                           | 400.3              |
| .10                                                                      | 7.4                 | 442.8         | 18.4                | 862.4         | 1285.2                          | 400.3              |
| .11                                                                      | 10.4                | 660.0         | 13.0                | 907.2         | 1638.0                          | 400.3              |
| .13                                                                      | 13.0                | 842.6         | 15.6                | 1090.8        | 1933.2                          | 400.3              |
| .15                                                                      | 14.7                | 907.2         | 15.6                | 1123.2        | 2120.4                          | 400.3              |
| .17                                                                      | 15.6                | 1008.8        | 14.7                | 1008.8        | 2181.6                          | 400.3              |
| .19                                                                      | 15.8                | 1130.4        | 14.7                | 907.2         | 2127.6                          | 400.3              |
| .21                                                                      | 15.6                | 1110.4        | 13.0                | 851.2         | 1961.6                          | 400.3              |
| .23                                                                      | 14.7                | 1008.8        | 10.7                | 676.8         | 1747.6                          | 400.3              |
| .25                                                                      | 13.6                | 1018.8        | 8.1                 | 516.8         | 1531.6                          | 400.3              |
| .27                                                                      | 13.6                | 932.4         | 6.2                 | 410.4         | 1342.8                          | 400.3              |
| .29                                                                      | 12.3                | 828.0         | 5.2                 | 311.2         | 1159.2                          | 400.3              |
| .30                                                                      | 10.7                | 702.0         | 4.0                 | 277.2         | 979.2                           | 400.3              |
| .32                                                                      | 8.8                 | 579.6         | 3.7                 | 241.2         | 820.8                           | 400.3              |
| .34                                                                      | 7.3                 | 486.0         | 3.0                 | 190.8         | 676.8                           | 400.3              |
| .36                                                                      | 6.2                 | 410.4         | 2.1                 | 144.0         | 554.4                           | 400.3              |
| .38                                                                      | 5.2                 | 341.2         | 1.7                 | 114.4         | 455.6                           | 400.6              |
| .42                                                                      | 4.4                 | 286.4         | 1.4                 | 91.6          | 378.0                           | 400.6              |
| .46                                                                      | 3.5                 | 235.2         | 0.9                 | 60.8          | 296.0                           | 400.6              |
| .49                                                                      | 2.3                 | 158.4         | 0.6                 | 36.0          | 224.4                           | 400.6              |

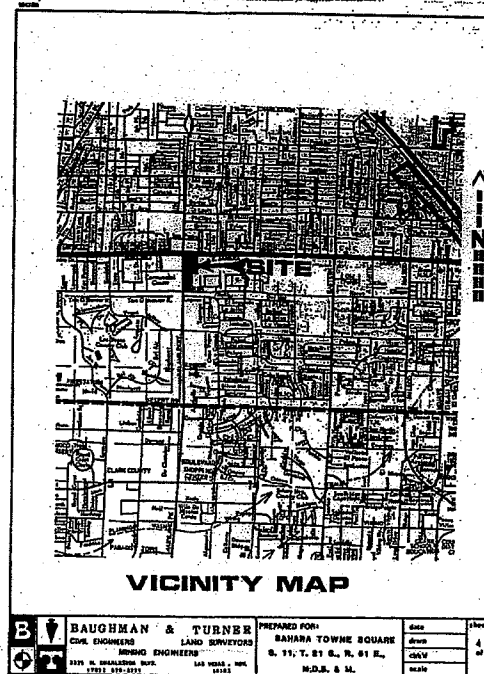
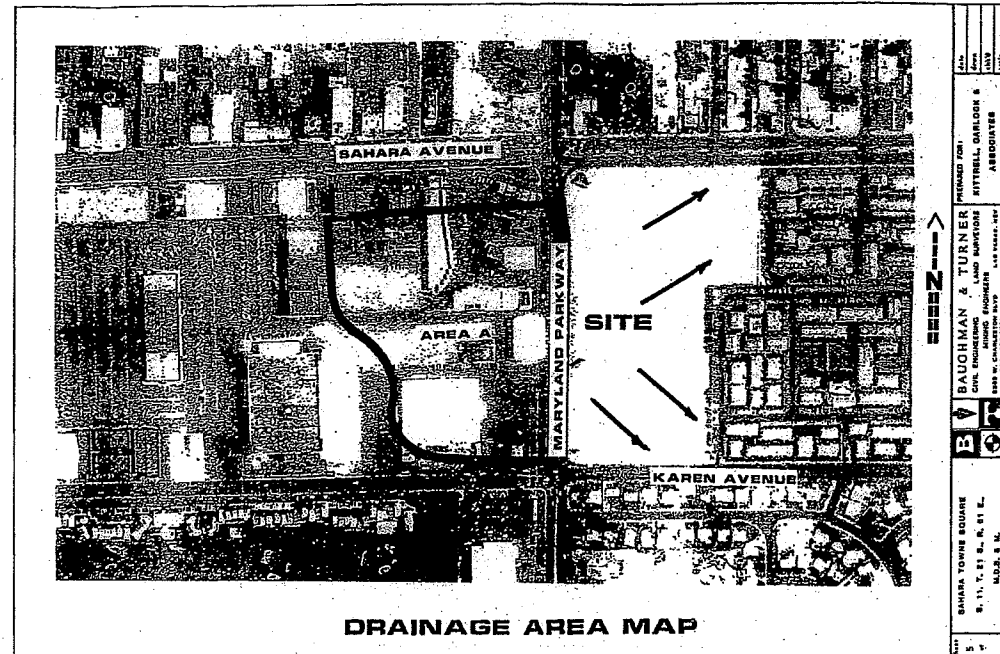
| TIME | INFLOW              |               |                     |               | OUTFLOW<br>VOLUME<br>@ 1.50 CFS | DETAINED<br>VOLUME |
|------|---------------------|---------------|---------------------|---------------|---------------------------------|--------------------|
|      | K-1<br>FLOW<br>RATE | K-1<br>VOLUME | K-2<br>FLOW<br>RATE | K-2<br>VOLUME |                                 |                    |
| .46  | 2.3                 | 288.0         | 0.6                 | 72.0          | 360.0                           | 16327.9            |
| .49  | 1.7                 | 208.8         | 0.4                 | 43.2          | 252.0                           | 15887.3            |
| .53  | 1.2                 | 151.2         | 0.2                 | 28.8          | 180.0                           | 15338.7            |
| .57  | 0.9                 | 108.0         | 0.2                 | 21.6          | 129.6                           | 14718.1            |
| .61  | 0.6                 | 79.2          | 0.1                 | 14.4          | 93.6                            | 14047.1            |
| .65  | 0.5                 | 57.6          | 0.1                 | 7.2           | 64.8                            | 13340.1            |
| .68  | 0.3                 | 36.0          | 0                   | 0             | 36.0                            | 12604.3            |
| .72  | 0.2                 | 28.8          | 0                   | 0             | 28.8                            | 11834.7            |
| .76  | 0.2                 | 21.6          | 0                   | 0             | 21.6                            | 11067.9            |
| .86  | 0.1                 | 16.0          | 0                   | 0             | 16.0                            | 10300.8            |
| .95  | 0                   | 0             | 0                   | 0             | 0                               | 9533.2             |

7134.7 ÷ 5.56 = 1281.6" = 1600 = 0.36 HRS

TOTAL HOLDING TIME = 0.45 + 0.08 + 0.36 = 1.23 HRS



NOT LEGIBLE  
FOR MICROFILMING



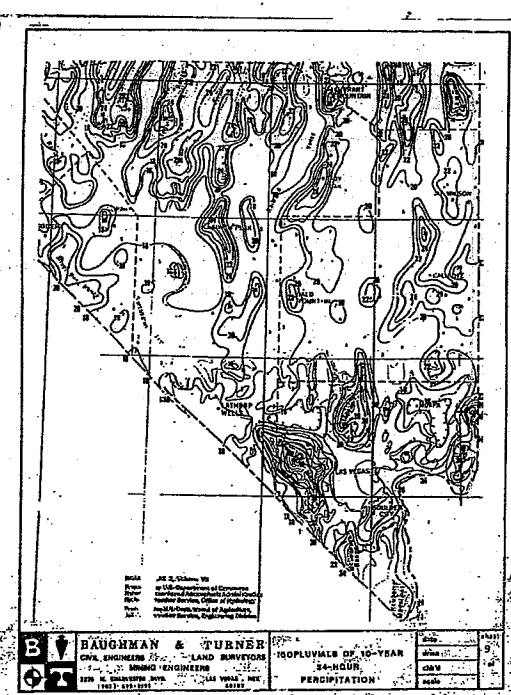
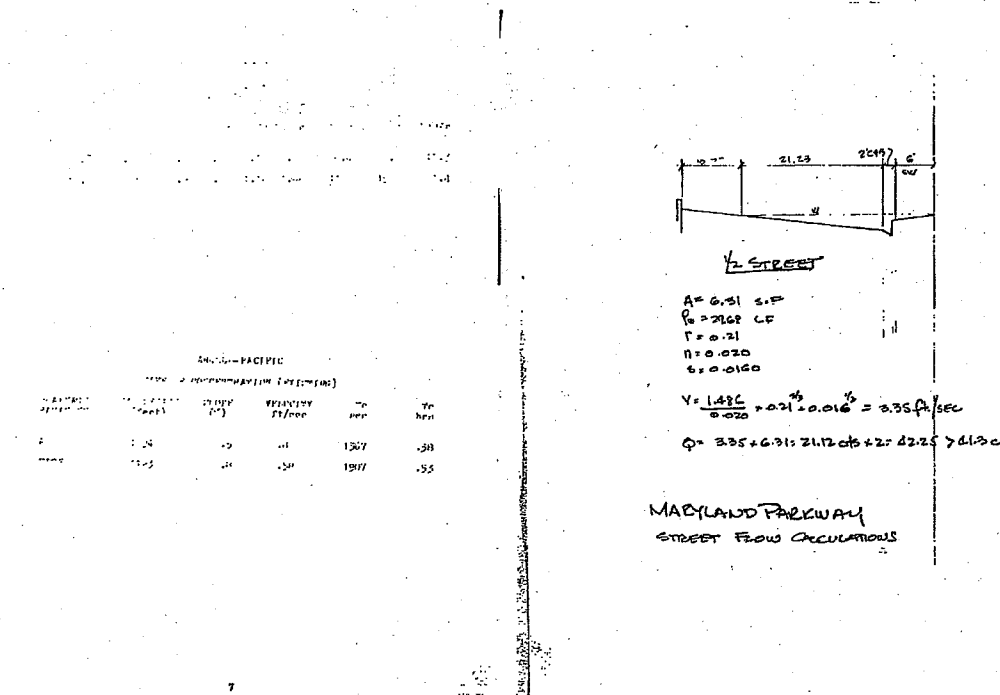
ANNULS-PACIFIC  
STORM WATER RUNOFF (24 Hr. PRECIPITATION)  
(IMPROVED - AFTER DEVELOPMENT)

| RAINFALL<br>DEPTH (in) | CF  | CF | CF   | CF   | CF   | CF   | CF   | CF   |
|------------------------|-----|----|------|------|------|------|------|------|
| 15.0                   | 90  | 30 | 14.9 | 1.77 | 2.17 | 2.77 | 25.4 | 32.3 |
| 16.5                   | 100 | 31 | 17.0 | 1.77 | 2.17 | 2.77 | 30.4 | 37.3 |

ANNULS-PACIFIC  
STORM WATER RUNOFF (24 Hr. PRECIPITATION)  
(IMPROVED - AFTER DEVELOPMENT)

| RAINFALL<br>DEPTH (in) | CF  | CF | CF   | CF   | CF   | CF   | CF   | CF   |
|------------------------|-----|----|------|------|------|------|------|------|
| 15.0                   | 90  | 30 | 14.9 | 1.77 | 2.17 | 2.77 | 25.4 | 32.3 |
| 16.5                   | 100 | 31 | 17.0 | 1.77 | 2.17 | 2.77 | 30.4 | 37.3 |



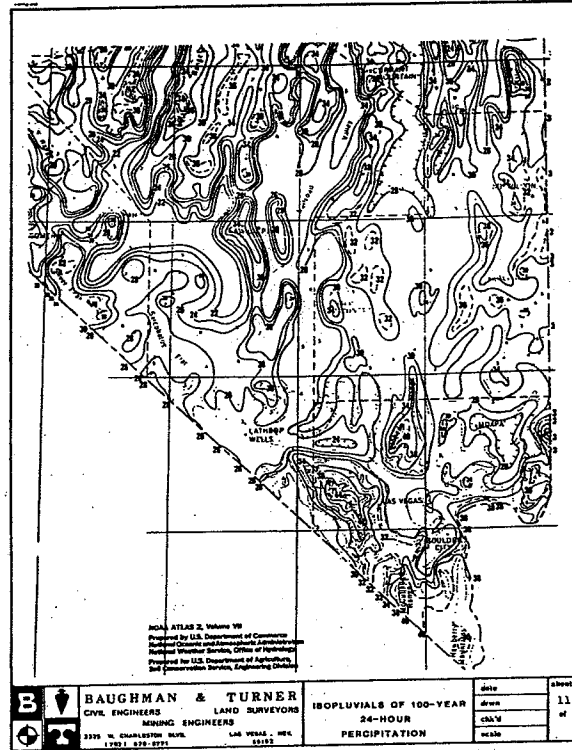
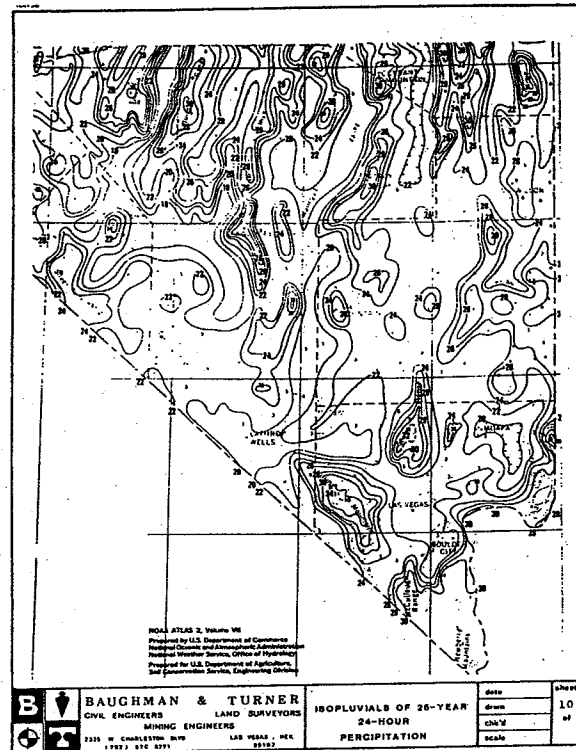


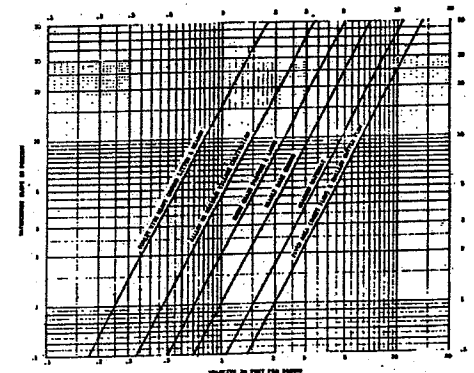
Table 2-2.--Runoff curve numbers for selected agricultural, suburban, and urban land use. (Antecedent moisture condition II, and  $I_a = 0.25$ )

| LAND USE DESCRIPTION                                          | Runoff Curve Number |
|---------------------------------------------------------------|---------------------|
| Cultivated land <sup>1/</sup> without conservation treatment  | 72                  |
| with conservation treatment                                   | 59                  |
| Pasture or range land: poor condition                         | 70                  |
| good condition                                                | 55                  |
| Forest: good condition                                        | 30                  |
| Wood or forest land: thin stand, poor cover, no undergrowth   | 45                  |
| Open space, lawns, parks, golf courses, cemeteries, etc.      | 35                  |
| good condition: grass cover on 75% or more of the area        | 30                  |
| fair condition: grass cover on 25% to 75% of the area         | 35                  |
| Commercial and business areas (R&B improvements)              | 80                  |
| Industrial districts (75% improvements)                       | 85                  |
| Residential <sup>2/</sup>                                     |                     |
| Average lot size                                              |                     |
| 1/4 acre or less                                              | 77                  |
| 1/2 acre                                                      | 70                  |
| 3/4 acre                                                      | 63                  |
| 1 acre                                                        | 55                  |
| Driveways, parking lots, roads, driveways, etc. <sup>3/</sup> | 98                  |
| Barren and rocky                                              | 95                  |
| gavel with curbs and stone covered <sup>4/</sup>              | 90                  |
| gavel                                                         | 85                  |
| gavel                                                         | 80                  |

<sup>1/</sup> For a more detailed description of agricultural land use curve numbers refer to National Engineering Handbook, Section 5, Hydrology, Chapter 1, Sec. 2.10.  
<sup>2/</sup> Good cover is protected from grazing and litter and brush cover soil.  
<sup>3/</sup> Curve numbers are computed assuming the runoff from the house and driveway is directed towards the street with a minimum of road water directed to areas where additional infiltration would occur.  
<sup>4/</sup> The remaining portion of the area (lawns) are considered to be in good pasture condition for these curve numbers.  
<sup>5/</sup> In some urban situations of the country a curve number of 95 may be used.

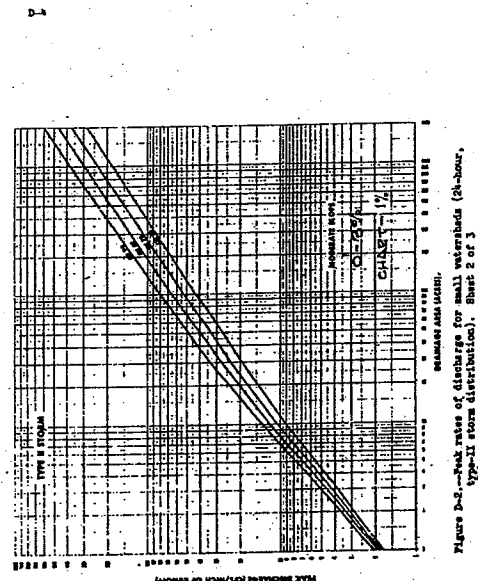
3-2

then computed by dividing the total overland flow length by the average velocity.



Storm sewer or road gutter flow  
Travel time through the storm sewer or road gutter system to the main open channel is the sum of travel times in each individual component of the system between the uppermost inlet and the outlet. In most cases average velocities can be used without a significant loss of accuracy. During major storm events, the sewer system may be fully taxed and additional overland flow may occur, generally at a significantly lower velocity than the flow in the storm sewers. By using average conduit sizes and an average slope (excluding any vertical drops in the system), the average velocity can be estimated using Manning's formula.

Since the hydraulic radius of a pipe flowing half full is the same as when flowing full, the respective velocities are equal. Travel time may



E-2

Table E-1.--Slope adjustment factors by drainage areas

| FLAT SLOPES             |             |             |             |              |              |              |                |                |
|-------------------------|-------------|-------------|-------------|--------------|--------------|--------------|----------------|----------------|
| Slope<br>(per-<br>cent) | 10<br>acres | 20<br>acres | 50<br>acres | 100<br>acres | 200<br>acres | 500<br>acres | 1,000<br>acres | 2,000<br>acres |
| 0.1                     | 0.49        | 0.47        | 0.44        | 0.43         | 0.42         | 0.41         | 0.41           | 0.40           |
| 0.2                     | .61         | .59         | .56         | .55          | .54          | .53          | .53            | .52            |
| 0.3                     | .69         | .67         | .65         | .64          | .63          | .62          | .62            | .61            |
| 0.4                     | .76         | .74         | .72         | .71          | .70          | .69          | .69            | .68            |
| 0.5                     | .82         | .80         | .78         | .77          | .77          | .76          | .76            | .75            |
| 0.6                     | .89         | .87         | .85         | .84          | .83          | .82          | .82            | .81            |
| 0.7                     | .90         | .89         | .88         | .87          | .87          | .87          | .87            | .86            |
| 0.8                     | 1.00        | 1.00        | 1.00        | 1.00         | 1.00         | 1.00         | 1.00           | 1.00           |
| 0.9                     | 1.13        | 1.14        | 1.14        | 1.15         | 1.16         | 1.17         | 1.17           | 1.17           |
| 1.0                     | 1.13        | 1.14        | 1.14        | 1.15         | 1.16         | 1.17         | 1.17           | 1.17           |
| 1.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 1.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 1.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 1.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 1.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 1.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 1.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 1.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 1.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.0                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 2.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.0                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 3.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.0                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 4.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.0                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 5.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.0                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 6.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.0                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 7.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.0                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 8.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.0                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.1                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.2                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.3                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.4                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.5                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.6                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.7                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.8                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 9.9                     | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.0                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.1                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.2                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.3                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.4                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.5                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.6                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.7                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.8                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 10.9                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.0                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.1                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.2                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.3                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.4                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.5                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.6                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.7                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.8                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 11.9                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.0                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.1                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.2                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.3                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.4                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.5                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.6                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.7                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.8                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 12.9                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.0                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.1                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.2                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.3                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.4                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.5                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.6                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.7                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.8                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 13.9                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 14.0                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 14.1                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 14.2                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 14.3                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 14.4                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 14.5                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 14.6                    | 1.21        | 1.22        | 1.22        | 1.22         | 1.29         | 1.30         | 1.31           | 1.31           |
| 14.7                    | 1.21        | 1.22        | 1.          |              |              |              |                |                |